

(12) INTERNATIONAL APPLICATION PUBLISHED UNDER THE PATENT COOPERATION TREATY (PCT)

(19) World Intellectual Property
Organization
International Bureau



(43) International Publication Date
11 March 2004 (11.03.2004)

PCT

(10) International Publication Number
WO 2004/019884 A3

(51) International Patent Classification⁷: **A61K 31/56**

(81) Designated States (*national*): AE, AG, AL, AM, AT, AU, AZ, BA, BB, BG, BR, BY, BZ, CA, CH, CN, CO, CR, CU, CZ, DE, DK, DM, DZ, EC, EE, ES, FI, GB, GD, GE, GH, GM, HR, HU, ID, IL, IN, IS, JP, KE, KG, KP, KR, KZ, LC, LK, LR, LS, LT, LU, LV, MA, MD, MG, MK, MN, MW, MX, MZ, NO, NZ, OM, PH, PL, PT, RO, RU, SC, SD, SE, SG, SK, SL, TJ, TM, TN, TR, TT, TZ, UA, UG, US, UZ, VC, VN, YU, ZA, ZM, ZW.

(21) International Application Number:
PCT/US2003/027105

(84) Designated States (*regional*): ARIPO patent (GH, GM, KE, LS, MW, MZ, SD, SL, SZ, TZ, UG, ZM, ZW), Eurasian patent (AM, AZ, BY, KG, KZ, MD, RU, TJ, TM), European patent (AT, BE, BG, CH, CY, CZ, DE, DK, EE, ES, FI, FR, GB, GR, HU, IE, IT, LU, MC, NL, PT, RO, SE, SI, SK, TR), OAPI patent (BF, BJ, CF, CG, CI, CM, GA, GN, GQ, GW, ML, MR, NE, SN, TD, TG).

(22) International Filing Date: 28 August 2003 (28.08.2003)

(25) Filing Language: English

Published:

- with international search report
- before the expiration of the time limit for amending the claims and to be republished in the event of receipt of amendments

(26) Publication Language: English

(30) Priority Data:
60/406,715 29 August 2002 (29.08.2002) US

(88) Date of publication of the international search report:
1 July 2004

(71) Applicant (*for all designated States except US*): REGENTS OF THE UNIVERSITY OF CALIFORNIA, THE [US/US]; 1111 Franklin Street, 5th Floor, Oakland, CA 94607 (US).

For two-letter codes and other abbreviations, refer to the "Guidance Notes on Codes and Abbreviations" appearing at the beginning of each regular issue of the PCT Gazette.

(72) Inventor; and
(75) Inventor/Applicant (*for US only*): PARHAMI, Farhad [US/US]; 612 South Barrington Avenue, #212, Los Angeles, CA 90049 (US).

(74) Agents: BROWN, Marc, E. et al.; McDermott, Will & Emery, 2049 Century Park East, Suite 3400, Los Angeles, CA 90067 (US).

WO 2004/019884 A3

(54) Title: AGENTS AND METHODS FOR ENHANCING BONE FORMATION

(57) Abstract: The present invention discloses agents and methods for inducing osteoblastic cellular differentiation, as well as the use of such agents and methods to treat patients to maintain bone mass, enhance bone formation and/or bone repair. Exemplary agents include oxysterols, alone or in combination with particular oxysterols, or other agents known to assist in bone formation. The invention further includes medicaments including oxysterols for the treatment of bone disorders, local injections of oxysterols or cells (206) and implants (202) having agents or cells (203) to facilitate bone repair.

INTERNATIONAL SEARCH REPORT

International application No.

PCT/US03/27105

A. CLASSIFICATION OF SUBJECT MATTER

IPC(7) : A61K 31/56
US CL : 514/182, 863

According to International Patent Classification (IPC) or to both national classification and IPC

B. FIELDS SEARCHED

Minimum documentation searched (classification system followed by classification symbols)

U.S. : 514/182, 863

Documentation searched other than minimum documentation to the extent that such documents are included in the fields searched

Electronic data base consulted during the international search (name of data base and, where practicable, search terms used)

C. DOCUMENTS CONSIDERED TO BE RELEVANT

Category *	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.
A	US 3,887,545 A (IACOBELLI et al) 03 June 1975 (03/06/1975), see entire document.	1-41
A	US 4,183,852 A (KAISER) 15 January 1980 (15/01/1980), see entire document.	1-41
A	US 4,743,597 (JAVITT et al) 10 May 1988 (10/05/1988), see entire document.	1-41

Further documents are listed in the continuation of Box C.

See patent family annex.

* Special categories of cited documents:	"T"	later document published after the international filing date or priority date and not in conflict with the application but cited to understand the principle or theory underlying the invention
"A" document defining the general state of the art which is not considered to be of particular relevance	"X"	document of particular relevance; the claimed invention cannot be considered novel or cannot be considered to involve an inventive step when the document is taken alone
"E" earlier application or patent published on or after the international filing date	"Y"	document of particular relevance; the claimed invention cannot be considered to involve an inventive step when the document is combined with one or more other such documents, such combination being obvious to a person skilled in the art
"L" document which may throw doubts on priority claim(s) or which is cited to establish the publication date of another citation or other special reason (as specified)	"&"	document member of the same patent family
"O" document referring to an oral disclosure, use, exhibition or other means		
"P" document published prior to the international filing date but later than the priority date claimed		

Date of the actual completion of the international search

09 February 2004 (09.02.2004)

Date of mailing of the international search report

05 MAY 2004

Name and mailing address of the ISA/US

Mail Stop PCT, Attn: ISA/US
Commissioner for Patents
P.O. Box 1450
Alexandria, Virginia 22313-1450
Facsimile No. (703) 305-3230

Authorized officer

Sreenivasan Padmanabhan

Telephone No. 703-308-1235